

Breaking the Frame: Decomposition and Juxtaposition of Visually Complex Documents

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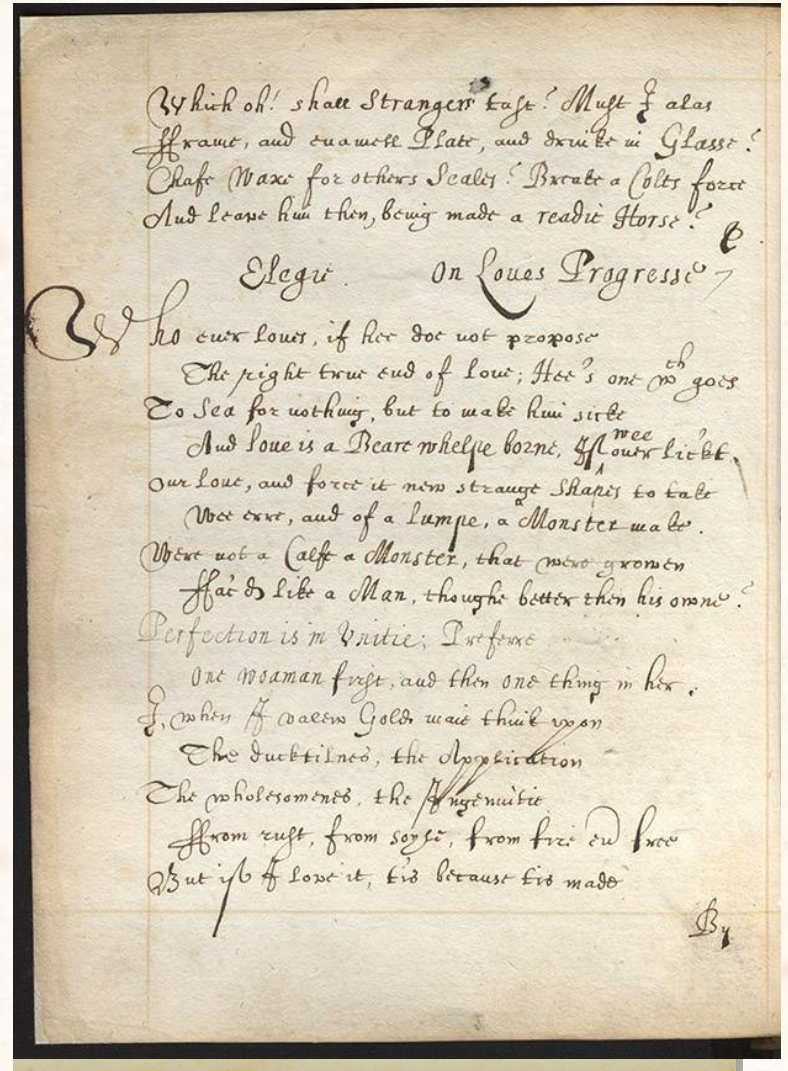
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Cultural Heritage Documents

- Old typesetting
- Rich illustrations
- Technical drawings
- Draft manuscripts
- Visual structures



Text

- **Strengths**
 - Rich encoding models
 - Analytical tools
 - Useful theoretic foundations
- **Weaknesses**
 - Omits key content
 - Requires early formalization

Image

- **Strengths**
 - Rich visual content
 - Key for scholarly work
- **Weaknesses**
 - Little support for analysis or interaction
 - Hard to use

The appropriate scholarly tools for the early exploratory stages of a project may be pen and paper, or chalk and a large blackboard...

John Lavagnino
When Not to Use TEI

Key Requirements

Explore new ideas

Avoid precision and formality

Entertain conflicting ideas

Advantages of Spatial Metaphors

Early stage knowledge work
Avoid premature formalization
Visual representation
Direct manipulation of content

. . . but,

Current Systems

Small, discrete “information objects” and Hierarchical “collections”

User authored content or surrogates for search results

Textual content

Proposed System

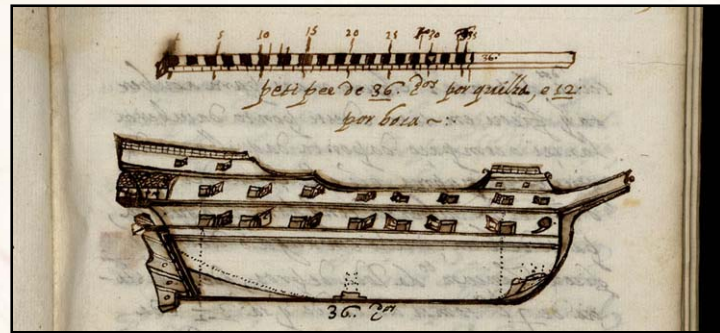
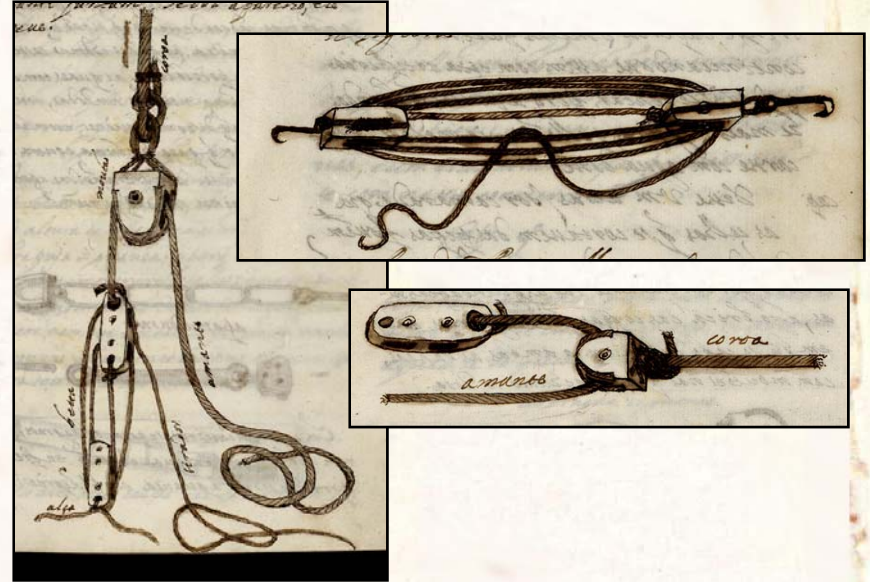
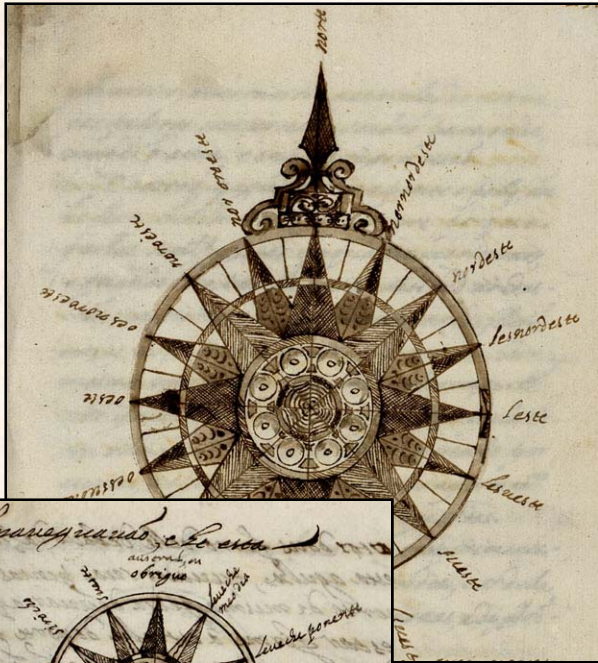
Large objects with complex internal structure

Digital cultural heritage material and user authored derivatives

Image-focused content

Rethink and redesign interaction affordances provided by current systems

Example: Juxtaposition



Key Issues

- **Macro-level structure**
 - Internal structure
 - Part-whole relationships
 - Relationships between documents
- **Sub-document structure**
 - Manual content identification
 - Document image analysis support
 - Text lines, words, ROI, color layers

Summary

Goal Support early stage, exploratory research involving visually complex documents

Approach Rethink and extend the spatial metaphor interacting with documents

Focus Decomposition and juxtaposition

Tasks Design and implement interface features
Deploy test applications
Evaluate system utility

Contributions

Theory Extend existing interaction metaphors to support visually complex documents

Users Understand how scholars use these metaphors

Systems Web-based implementation

Practical Provide scholars with new tools to support early stage research